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## WHAT IS CLAIMED IS:

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1. An image display device comprising:

an adjusting circuit that adjusts inputted image signals based on an adjusting value to be sequentially up-to-dated;

a non-linear converting circuit at a stage after said adjusting circuit, said non-linear converting circuit that converts inputted signals into signals in a non-linear manner;

a display brightness characteristics value detecting circuit at a stage after said non-linear converting circuit, said display brightness characteristics value detecting circuit that sequentially detects a display brightness characteristics value indicating lightness of a display image from inputted signals;

a brightness refraining value outputting circuit that sequentially outputs a brightness refraining value that refrains lightness of said display image based on said display brightness characteristics value; and

an adjusting value outputting circuit that applies a conversion having characteristics being inverse with relative to a converting characteristics of said non-linear converting circuit or conversion having characteristics approximate to the inverse characteristics, to said brightness refraining value to

output said adjusting value.

2. An image display device comprising:

a multiplying circuit that outputs output signals obtained by multiplying inputted signals and a variable coefficient;

a non-linear converting circuit at a stage after said multiplying circuit, said non-linear converting circuit that applies a non-linear conversion of power of  $\gamma(\gamma>1)$  or a conversion being approximate to the non-linear conversion of power of  $\gamma(\gamma>1)$  to inputted signals and outputs the converted signals; and

a display brightness characteristics value detecting circuit at a stage after said non-linear converting circuit, said display brightness characteristics value detecting circuit that detects a display brightness characteristics value indicating lightness of display image from inputted signal; wherein a first value which is the \gamma-th power root to a calculated value G that is sequentially upto-dated or a second value approximate to the first value is used as said variable coefficient, and

regarding as said calculated value G, if said display brightness characteristics value is defined by B, a calculated value before updating is defined by GO, and a reference value that is compared with said display brightness characteristics value is defined by

B0, then a relation of  $G = G0 \times B0 / B$  is satisfied.

- 3. The image display device according to Claim 2, wherein if said value of  $G0 \times B0 / B$  is more than 1, then 1 is set as said calculated value G.
  - 4. An image display device comprising:

a multiplying circuit that outputs output signals obtained by multiplying inputted signals and a variable coefficient;

a non-linear converting circuit at a stage after said multiplying circuit, said non-linear converting circuit that applies a non-linear conversion of power of  $\gamma(\gamma>1)$  or a conversion being approximate to the non-linear conversion of power of  $\gamma(\gamma>1)$  to inputted signals and outputs the converted signals; and

a display brightness characteristics value detecting circuit at a stage after said non-linear converting circuit, said display brightness characteristics value detecting circuit that detects a display brightness characteristics value indicating lightness of display image from inputted signal,

wherein said variable coefficient is a first value which is the \gamma-th power root to a calculated value G that is sequentially up-to-dated or a second value being approximate to the first value, or a value obtained by modifying a high frequency component of a

first value which is the  $\gamma$ -th power root of the calculated value G that is sequentially up-to-dated or the second value being approximate to the first value, and

wherein said calculated value G is any of (i) said display brightness characteristics value, or (ii) a value of GO x BO / B if a value obtained by modifying a high frequency component of a plurality of said display brightness characteristics value that is sequentially detected from the input signals is defined by B and a calculated value before updating is defined by GO and a reference value that is compared with said display brightness characteristics value is defined by BO or (iii) a value obtained by modifying a high frequency component of GO x BO / B to be sequentially obtained or (iv) a value of KO x BO / B if a variable coefficient before updating is defined by KO.

5. The image display device according to Claim 4, wherein 1 is set as said calculated value G if a value used as said calculated value G, among (i) said value of GO x BO / B, (ii) said value obtained by modifying a high frequency component of GO x BO / B to be sequentially obtained and (iii) said value of KO<sup>7</sup> x BO / B, is more than 1 if the variable coefficient before updating is defined by KO.

6. An image display device comprising:

an adjusting circuit that adjusts inputted image signals based on an adjusting value to be sequentially up-to-dated;

a non-linear converting circuit at a stage after said adjusting circuit, said non-linear converting circuit that converts inputted signals into signals in a non-linear manner;

a display brightness characteristics value detecting circuit at a stage after said non-linear converting circuit, said display brightness characteristics value detecting circuit that sequentially detects a display brightness characteristics value indicating lightness of display image from inputted signals;

a brightness refraining value outputting circuit that sequentially outputs a brightness refraining value that refrains said lightness of said display image based on the display brightness characteristic value and a brightness control value related to an image quality adjustment; and

an adjusting value outputting circuit that applies a first conversion having characteristic being inversed with relative to conversion characteristics of said non-linear converting circuit or a conversion having characteristics being approximate to the first conversion to said brightness refraining value to

output said adjusting value.

7. An image display device comprising:

an adjusting circuit that adjusts inputted image signals based on an adjusting value to be sequentially up-to-dated;

a non-linear converting circuit at a stage after said adjusting circuit, said non-linear converting circuit that converts inputted signals into signals in a non-linear manner;

a display brightness characteristics value detecting circuit at a stage after said non-linear converting circuit, said display brightness characteristics value detecting circuit that sequentially detects a display brightness characteristics value indicating lightness of display image from inputted signals;

a brightness refraining value outputting circuit that sequentially outputs a brightness refraining value that refrains said lightness of said display image based on the display brightness characteristic value; and

an adjusting value outputting circuit that outputs said adjusting value based on (i) a value obtained by applying a first conversion having characteristic being inversed with relative to conversion characteristics of said non-linear converting circuit or a conversion

having characteristic being approximate to the inverse characteristics to said brightness refraining value, and (ii) a brightness control value relating to an image quality adjustment.

- 8. The image display device according to Claim 1, wherein said display brightness characteristics value is a total sum or an average value of display signals for a predetermined term.
- 9. The image display device according to Claim 1, wherein said display brightness characteristics value is the number of signals over a predetermined value of display signals for a predetermined term.

- 10. The image display device according to Claim 1, wherein said display brightness characteristics value is a total sum or an average value of kinds of colors of display signals for a predetermined term.
- 11. The image display device according to Claim 1, wherein said display brightness characteristics value is a total sum or an average value of brightness components of display signals for a predetermined term.
- 12. The image display device according to Claim 1, wherein said display brightness characteristics value

is a static value of display signals in a specified area in a screen.

- 13. The image display device according to Claim 1, wherein conversion characteristics of said non-linear converting circuit is a function having characteristics so as to be approximate to characteristics of equation of  $g(x)=x^r$  (x: inputted signal, g(x): output signal) over all the inputted area and a function having characteristics so that an output becomes larger than a value obtained by the equation of  $g(x)=x^r$  in a lower gradation section.
- 14. The image display device according to Claim 13, wherein conversion characteristics of said non-linear converting circuit is represented by equations of:

$$g(x) = a \cdot * x \qquad (x \le x 0),$$

$$g(x) = (1-z) x^{r} + z (x > x0)$$

(x: inputted signal, g(x): output signal, a, z,  $\gamma$  and x0: constant values).

- 15. The image display device according to Claim 13, wherein said adjusting value is the  $\gamma$ -th power root to said brightness refraining value.
- 16. The image display device according to Claim

  1 further comprising a character information combining

circuit for overlapping character information over said image signal, wherein said adjusting circuit, said non-linear converting circuit, said character information combining circuit and said display brightness characteristics detecting circuit are arranged orderly.

- 17. The image display device according to Claim
  1, wherein pixels of said image display device are
  constituted by electron emission elements arranged in a
  matrix manner.
- 18. The image display device according to Claim
  17, wherein said electron emission elements are surface conduction type electron emission elements.
- 19. The image display device according to Claim 18, wherein said display brightness characteristics value is an emitted current value to be emitted from said electron emission elements.